

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-060719

(43)Date of publication of application : 06.03.2001

51)Int.Cl.

H01L 33/00

21)Application number : 11-233001

(71)Applicant : NICHIA CHEM IND LTD

22)Date of filing : 19.08.1999

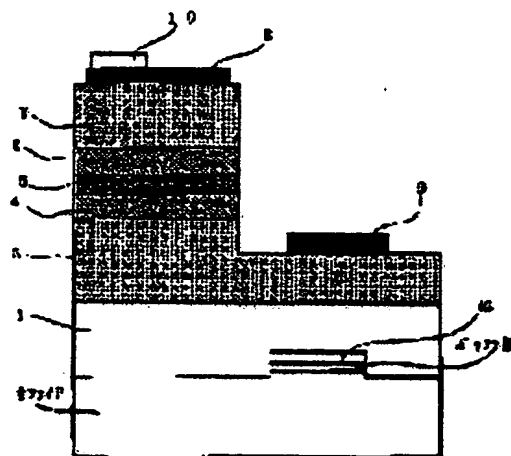
(72)Inventor : MUKAI TAKASHI

54) NITRIDE SEMICONDUCTOR LIGHT EMITTING DIODE

57)Abstract:

PROBLEM TO BE SOLVED: To enhance emission efficiency and emission output by growing a semiconductor element emitting light in UV region where the emission peak wavelength has a specified value or less on a semiconductor substrate having dislocation density of a very low specified value.

SOLUTION: A buffer layer, an n-type contact layer 3 containing AlaGa1-aN ($0 \leq a < 0.1$), an n-type clad layer 4 containing AleGa1-eN ($0 < e < 0.3$), an active layer 5 of InfGa1-fN ($0 \leq f < 0.1$), a p-type clad layer 6 containing AldGa1-dN ($0 < d < 0.4$), and a p-type contact layer 7 containing AlbGa1-bN ($0 \leq b < 0.1$) are grown sequentially on a GaN substrate 1 having dislocation density of $10^6/\text{cm}^2$ or less thus forming a nitride semiconductor element having emission peak wavelength of 380 nm or less. The n-type contact layer 3 is provided with an electrode and the p-type contact layer 7 is provided with an electrode. In the case of a UV LED emitting light in UV region, emission efficiency is enhanced using a nitride semiconductor having low dislocation density.



LEGAL STATUS

Date of request for examination]

25.03.2002

Date of sending the examiner's decision of rejection]

Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

Date of final disposal for application]

Patent number]

Date of registration]

BEST AVAILABLE COPY

[Number of appeal against examiner's decision
of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office